

See D. Carty

~~29. An electrical assembly comprising:
traces extending toward respective off-assembly connections; and
essentially parallel portions of the traces traversing apertures defined in one or more
voltage planes of the assembly to inductively couple compensating crosstalk
signals having opposing polarity to an original crosstalk signal.~~

~~30. The electrical assembly of claim 29,
wherein the aperture traversing portions of the traces at least partially define integrated,
coplanar transformer structures.~~

REMARKS

Claims 1-15 and 23-30 remain pending herein. Claims 1-3, 10, and 11 have been amended herein.

1. The drawings were objected to under 37 C.F.R. § 1.83(a) for failing to show "off-assembly connections." However, Applicant respectfully submits that the drawings indeed illustrate the connections noted by the Examiner. For example, referring to FIG. 2, an off-assembly circuit portion 201 is illustrated. The off-assembly circuit portion 201 includes off-assembly electrical connections 1-5. In this regard, please refer to page 8, lines 11-29. Further, FIG. 3 illustrates off-assembly electrical connections 1' and 2'. See page 9, lines 18-21. Accordingly, reconsideration and withdrawal of the objections to the drawings are respectfully requested.

2. Claims 10 and 11 were objected under Section 112, second paragraph. While Applicant submits that claims 10 and 11 as originally presented for examination fully comply with Section 112, second paragraph, the claims have been amended herein to even more clearly point out the invention. In this regard, claim 10 has been amended to delete recitation of "nearest neighbors thereof" and insert therefor "nearest off-assembly connections." With respect to claim 11, recitation of the linear nature of the array has been clarified, and recitation of "nearest neighbors" has been amended in light of the modifications to claim 10 noted above.

Should the Examiner have any questions or concerns regarding the amendments to claims 10 or 11, the Examiner is invited to telephone Applicant's undersigned attorney to discuss any such questions or concerns. For at least the foregoing reasons, reconsideration and withdrawal of the Section 112, second paragraph rejection are respectfully requested.

3. Claims 1-4, 7, 9-12, 14-15, and 23-30 were rejected under Section 102(e) over Hashim. Applicant respectfully traverses this rejection for the following reasons.

The presently claimed invention (claim 1) is directed to an electrical assembly that includes traces extending toward respective off-assembly connections, and integrated transformer structures defined along the traces. Claim 1 has been amended herein to clarify the nature of these integrated transformer structures, by incorporating features from dependent claim 2. As recited, the integrated transformer structures defined along the traces induce compensating crosstalk signals having a polarity opposing that of initial crosstalk signals. The initial crosstalk signals are associated with mutual coupling between adjacent off-assembly connections. Further, the integrated transformer structures include an aperture in a voltage plane, and essentially parallel portions of a pair of traces are positioned so as to traverse the aperture. An example of this particular structure is illustrated in the drawings. Referring to FIG. 1, traces 121 and 122 form a pair of traces that are oriented so as to be parallel to each other and traverse aperture 110C which is formed within the voltage plane.

Dependent claim 2 now recites that the aperture is provided in a plane separate from the parallel portions of the traces, such that those portions pass under or over the aperture. Dependent claim 3 now recites that the parallel portions of the traces are coplanar with the voltage plane. In this regard, the Examiner is referred to page 6, first full paragraph, which provides a discussion of the orientation of the parallel portions with respect to the aperture and the voltage plane.

Applicant notes that independent claims 23 and 29 recite similar features, in particular, traces traversing an aperture defined in a voltage plane.

Apparently, the PTO has looked to Hashim for disclosure of all features of the presently claimed invention. However, Hashim fails to disclose (or even remotely suggest) the important

structural features noted above, namely orientation of the parallel portions of the traces to form a transformer structure, whereby those portions traverse an aperture in a voltage plane. In this regard, the PTO's reliance upon Hashim with respect to the recited apertures is somewhat unclear in the Office Action. In the paragraph bridging pages 3 and 4 of the Office Action dated October 3, 2001, the PTO makes reference to parallel portions of traces passing over an aperture, and references FIGs. 1-4, elements T1-T5, R1-R5; col. 2, line 63 – col. 3, line 55 of Hashim. However, those portions of Hashim nowhere disclose or remotely suggest the recited configuration of parallel portions traversing an aperture. It appears from the drawings of Hashim, the only apertures that are present are those that are formed within the traces themselves for electrical connection. See hole 18 in FIG. 2 for example. While Hashim appears to disclose capacitive coupling between parallel portions of traces provided in parallel planes (for example, portion 22 of path T3 appears to couple with portion 32 of path R2 shown in FIGs. 2-4 of Hashim), those portions (portions 22 and 32) do not traverse an aperture in a voltage plane, as required by the presently claimed invention.

For at least the foregoing reasons, Applicant submits that Hashim fails to disclose (or remotely suggest) all features of the presently claimed invention. Accordingly, withdrawal of the Section 102(e) rejection over Hashim is respectfully requested.

4. Claims 5-6, 8, and 13 were rejected under Section 103 over Hashim. Applicant submits that this rejection should be withdrawn for the reasons noted above.

For at least the foregoing reasons, Applicant respectfully submits that the present application is now in condition for allowance. Accordingly, the Examiner is requested to issue a notice of allowance for all pending claims.

Should the Examiner deem that any further action by the Applicant would be desirable for placing this application in even better condition for issue, the Examiner is requested to telephone Applicant's undersigned attorney at the number listed below.

<u>CERTIFICATE OF MAILING</u>	
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to Commissioner for Patents, Washington, D.C. 20231 on the date shown below.	
<i>Rebecca J. Morrison</i> Rebecca J. Morrison	<u>1-15-02</u> Date

Respectfully submitted,



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MARKED-UP COPY OF AMENDED CLAIMS IN ACCORDANCE WITH37 C.F.R. § 121(c)(ii)

1. (Amended) An electrical assembly comprising:
traces extending toward respective off-assembly connections; and
integrated transformer structures defined along the traces to induce compensating crosstalk signals having opposing polarity to initial crosstalk signals associated with mutual coupling between adjacent of the off-assembly connections, wherein one or more of the integrated transformer structures each comprise an aperture in a voltage plane of the electrical assembly, and essentially parallel portions of corresponding pairs of the traces, the essentially parallel portions traversing the aperture.
2. (Amended) The electrical assembly of claim 1, [wherein one or more of the integrated transformer structures each comprise:
an aperture in a voltage plane of the electrical assembly;
essentially parallel portions of corresponding pairs of the traces, the essentially parallel portions passing over the aperture] wherein the essentially parallel portions of corresponding pairs of traces pass over or under the aperture.
3. (Amended) The electrical assembly of claim 1, wherein [one or more of the integrated transformer structures each comprise:
an aperture in a voltage plane of the electrical assembly; and
essentially parallel portions of corresponding pairs of the traces,] the essentially parallel portions are coplanar with the voltage plane [and traversing the aperture therein].

10. (Amended) The electrical assembly of claim 1,
wherein the off-assembly connections are organized as an array thereof; and
wherein, for each of the traces, one or more of the integrated transformer structures are
defined therealong to induce respective of the compensating crosstalk signals and
thereby oppose respective of the initial crosstalk signals introduced at a
corresponding one of the off-assembly connections by nearest [neighbors thereof]
off-assembly connections of said corresponding one of the off-assembly
connections.

11. (Amended) The electrical assembly of claim 10,
wherein the array [includes a] is linear [array];
wherein the nearest [neighbors] off-assembly connections number two; and
wherein, for essentially each of the traces, two of the integrated transformer structures are
defined therealong to induce respective of the compensating crosstalk signals and
thereby oppose respective of the initial crosstalk signals introduced by the nearest
[neighbors] off-assembly connections.